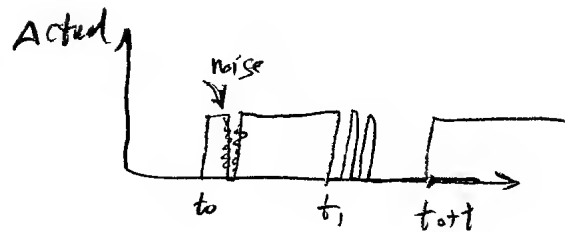
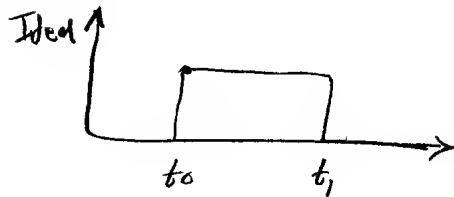
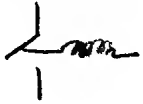


Bouncing / De bouncing Problem

Switch dynamics



Solution

1- Software

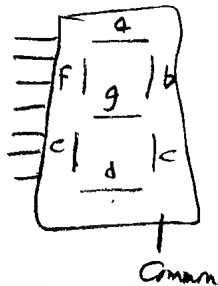
ignore delay and neglect any change for period of time

2- Hardware

Using Capacitor as \neq Low Pass Filter

Interface - Seven Segment

Common Anode



Common Cathode

Input: 2 push button

output: 7-segment

Program

SW1	SW2	
0	0	Turn off Seven-segment
0	1	Count up
1	0	Count down
1	1	Turn on all Led

Port = Function(h) ^{number}

main: loop based on switches

Byte \rightarrow data type for port